

REMARKS

In the Office Action, the Examiner rejected Claims 1, 2, 4, 6 and 7 over the prior art. In particular, Claims 1, 2 and 4 were rejected under 35 U.S.C. 102 as being fully anticipated by U.S. patent application publication no. 2004/0124450A1 (Yeap, et al.); and Claims 6 and 7 were rejected under 35 U.S.C. 103 as being unpatentable over Yeap, et al. The Examiner also rejected Claims 8-12 under 35 U.S.C. 112 as being indefinite, and withdrew Claims 13-17 from further consideration as being drawn to a non-elected invention.

In addition, the Examiner objected to the Abstract, to the disclosure and to the language of Claims 2-4 and 8-12. The Examiner objected to Claims 3 and 5, and indicated that these claims would be allowable if appropriately re-written. Claims 8-12, it may be noted, were not rejected over the prior art and the Examiner indicated that these claims would also be allowable if amended to overcome the 112 rejection and the objections to the claims.

Claim 1 is herein being amended to better define the subject matter of the claim. Claims 2, 4, 8 and 9 are being amended to address the Examiner's objections to the claims and the rejection of Claims 8-12 under 35 U.S.C. 112. Claim 5 is being rewritten in independent form including the limitations of Claim 1. Also, the Abstract and the disclosure are being amended to address the Examiner's objections; and new Claim 18, which is dependent from Claim 1, is being added to describe a preferred feature of the invention.

For the reasons discussed below, it is believed that the above-identified objections and the rejections of the claims 1, 2, 4, 6 and 7-12 are fully addressed herein, and that Claims 1-12 and 18 are now in condition for allowance.

First, with respect to Claim 5, as mentioned above, this claim is being rewritten in independent form including all of the limitations of original Claim 1. It is believed that this

places Claim 5 in condition for allowance without further amendment or argument, and an allowance of Claim 5 is requested.

With regard to the specification and the Abstract, changes are being made herein to address the Examiner's objections. In paragraph 24 of the specification, "as" is being changed to "As," to more correctly represent Arsenic. In the Abstract, line 6, "second layers" is being changed to "second disposable layer" to be consistent with the earlier reference to this second disposable layer.

It is submitted that these changes overcome the Examiner's objections to the specification and to the Abstract, and the Examiner is asked to reconsider and to withdraw these objections.

In objecting to the language of Claims 2-4 and 8-12, the Examiner specifically objected to the phrase "the liner" in Claim 2 and to the different references to source and drain regions extensions in Claims 4 and 8. The rejection of Claims 8-12 under 35 U.S.C. 112 was based on similar objections. This opportunity is being taken to delete the reference to "the liner" in Claims 2 and 8, and to change Claims 4, 8 and 9 so that these claims consistently refer to "source and drain regions extensions."

Applicants' Attorneys have carefully reviewed all of Claims 1-12 and 18, and all of these claims are clear and definite. In particular, the above-discussed changes overcome the Examiner's objections to the language of Claims 2-4 and 8-12 and the rejection of Claims 8-12 under 35 U.S.C. 112. The Examiner is thus asked to reconsider and to withdraw these objections and that rejection.

Since Claims 8-12 were not rejected over the prior art, the amendments to Claims 8 and 9 also place Claims 8-12 in condition for allowance, and such allowance is respectfully requested.

With regard to the rejections of Claims 1, 2, 4, 6 and 7 over the prior art, these claims, as well as Claims 3 and 18, patentably distinguish over the prior art because the prior art does not disclose or suggest the method defined by independent Claim 1 of forming the doped gate structure. Specifically, the prior art does not teach or suggest the feature of directing dopant ions directly into the first gate layer to form a doped gate above the gate dielectric layer.

Yeap, et al. describes a procedure for forming an integrated circuit, and in particular, an integrated circuit having a gate structure comprised of first and second layers, and where that second layer is removed. The Examiner argued in the office Action that, since a top surface of the gate layer is exposed to the environment, that layer is implanted with some ions during the implantation of the source and drain regions.

Applicants do not necessarily agree with the Examiner's conclusion that ions are implanted in the gate structure of Yeap, et al. It is noted that there is no express description in Yeap, et al that the gate layer is doped in the manner assumed by the Examiner. In addition, because of the care often taken during the doping process, it is not necessarily the case that the ions will be implanted in the gate structure.

However, in order to better differentiate Claim 1 from Yeap, et al, this claim is being amended to rephrase the description of the manner in which the gate is doped. Specifically, Claim 1, as amended herein, describes the feature of implanting ions directly in the first gate layer by directing said ions directly into said first gate layer to form a doped gate. Yeap, et al. does not disclose or suggest this direct implantation of the ions into the gate structure.


This feature of the invention is of utility because, as explained in detail in the present application, it allows a deep, doping implantation of the gate layer, and this can be done while keeping doping implants away from critical source/drain regions.

The other references of record have been reviewed, and these other references, whether they are considered individually or in combination, also do not disclose or suggest the above-discussed feature of the invention.

Because of the above-discussed differences between Claim 1 and the prior art, and because of the advantages associated with those differences, claim 1 patentably distinguishes over the prior art and is allowable. Claims 2-4, 6, 7 and 18 are dependent from Claim 1 and are allowable therewith. The Examiner is, thus, asked to reconsider and to withdraw the rejection of Claims 1, 2 and 4 under 35 U.S.C. 102, the objection to Claim 3, and the rejection of Claims 6 and 7 under 35 U.S.C. 103, and to allow Claims 1-4, 6, 7 and 18.

In light of the above-discussion, the Examiner is asked to reconsider and to withdraw the objections to the specification, the Abstract and the language of Claims 2-4 and 8-12. The Examiner is also requested to reconsider and to withdraw the rejection of Claims 1, 2 and 4 under 35 U.S.C. 102, the objection to Claims 3 and 5, the rejection of Claims 6 and 7 under 35 U.S.C. 103, and the rejection of Claims 8-12 under 35 U.S.C. 112, and to allow Claims 1-4, 6, 7-12 and 18. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully submitted,


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